12/29/78

Chapter 23

SOURCE SURVEILLANCE

Revision to

STATE OF CALIFORNIA
IMPLEMENTATION PLAN

for the

ATTAINMENT AND MAINTENANCE OF
AMBIENT AIR QUALITY STANDARDS

Adopted by the

California Air Resources Board

October 26, 1978

Tom Quinn, Chairman
Dr. Marjorie Evans, Board Member
Dr. Laurence Caretto, Board Member
Dr. Alvin Gordon, Board Member

FOREWARD

Chapter 23 is an Air Resources Board's (ARB) revision to the State of California Implementation Plan for the Attainment and Maintenance of Ambient Air Quality Standards (SIP). It is an administrative chapter which outlines the state and local procedures for surveillance of emission sources for the purposes of enforcing the SIP and establishing inventories of local emissions. It fulfills the requirements of the Clean Air Act as presented in the Code of Federal Regulations Section 51.19. Surveillance is an important component in the implementation program since it enables determination of whether or not control strategies are implemented and effective.

This chapter was considered by the ARB at its October 1978 meeting and adopted as a proposed SIP revision for submittal to the EPA.

This chapter was prepared jointly by ARB's Planning Division and the Subvention Section of the Stationary Source Control Division.

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Thomas C. Austin
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SOURCE SURVEILLANCE

I. Introduction

Source surveillance is the system by which emissions from stationary, vehicular, and area sources are monitored, in order to check for compliance with air pollution rules and regulations, providing the basis for enforcement actions. Source surveillance is also used to establish emissions inventories, support the development of model rules, or test newly developed or newly installed control equipment.

State law gives primary responsibility for the surveillance of stationary sources for enforcement purposes to the air pollution control districts (APCDs), with the Air Resources Board having oversight responsibility. (See Chapter 3, Section E for a delineation of responsibilities.) The state has primary responsibility for determining compliance with mobile source emission regulations. The Bureau of Automotive Repairs and State Department of Motor Vehicles assist the ARB in determining and enforcing motor vehicle compliance.

The responsibility for generating the data needed for emission inventories varies according to the emission source. The ARB's Stationary Source Control Division does source testing as part of the development of new control methods. The surveillance of vehicular emissions for rule and control measure development is also conducted by the state.

II. Stationary Source Surveillance

A. Compliance Data System (CDS)

For enforcement purposes, the U.S. Environmental Protection Agency (EPA) requires stationary sources which have the potential to emit more than 100 tons per year of all pollutants which are regulated as part of the SIP to be inspected at least annually. Certain categories of sources, including sources subject to New Source Performance Standards (NSPS) and the National Emission Standards for Hazardous Air Pollutants (NESHAPS), must be inspected yearly regardless of size (Sections 111 and 112 of the Clean Air Act). Federally required inspections are confirmed through quarterly (semi-annually for NESHAPS) Compliance Data System (CDS) reports to the ARB and EPA.

The CDS is coordinated by the EPA and ARB. Computer printouts which list the sources subject to review and the latest inspection date for each are sent to the APCDs quarterly to be updated. The enforcement statistics report format (Figure 23-1) is also sent to each district. Responses to this report provide federally required information as well as information which is of interest to the ARB so that it can better assist local activities. The updated reports are reviewed by the ARB's Enforcement Branch staff for noncomplying sources, overdue inspections, and the appropriateness of the inspection method. Completed reports are sent to the EPA within 15 days of the end of each quarter.

B. Permits to Operate

All APCDs require an authority to construct and permit to operate for all stationary sources.* Sources are inspected prior to approving or modifying a permit to operate to determine whether they are in compliance with applicable air pollution regulations. In addition, nearly all APCDs have permit renewal requirements, which require inspections every 1 to 3 years. Some sources are inspected more often; larger sources in some APCDs are inspected as often as bi-weekly.

*In the Bay Area Air Pollution Control District, not all sources are required to have permits to operate due to a grandfather clause in the district's permit regulation. However, all sources are registered and are required to file permit applications according to a four-year schedule which will be completed in December 1980.

Prepared by: _____
Title: _____
Date: _____

State: California
County: _____

Figure 23-1

ENFORCEMENT STATISTICS REPORT

For the 3rd Quarter of 1977/1978

(April, May, June, 1978)

CATEGORY A: TOTAL NUMBER OF POINT SOURCES, SUBJECT TO STATE IMPLEMENTATION PLAN (S.I.P.) REQUIREMENTS, AND

1. IN COMPLIANCE (CMST LISTED ON CDS AS 2, 3, 4, 8, or 9) _____

2. NOT IN COMPLIANCE - NOT ON A SCHEDULE (CMST IS ONE) _____

3. STATUS IN UNKNOWN (CMST IS 0 OR BLANK) _____

CATEGORY B: TOTAL NUMBER OF POINT SOURCES IN VIOLATION OF S.I.P. EMISSION REGULATIONS, ON VARIANCE/ COMPLIANCE SCHEDULES, AND

4. IN COMPLIANCE WITH SCHEDULED INCREMENTS OF PROGRESS (CMST IS 5) _____

5. NOT IN COMPLIANCE WITH SCHEDULED INCREMENTS OF PROGRESS (CMST IS 6) _____

6. COMPLIANCE STATUS WITH RESPECT TO INCREMENTS OF PROGRESS IS UNKNOWN (CMST IS 7) _____

CATEGORY C: TOTALS

7. TOTAL OF CATEGORIES A AND B. THIS NUMBER MUST ALSO EQUAL THE TOTAL NUMBER OF POINT SOURCES LISTED ON THE PRINTOUT ENTITLED CALIFORNIA INVENTORY OF SOURCES _____

CATEGORY D: STAGE I VAPOR RECOVERY REGULATIONS

8. NUMBER OF SOURCES INSPECTED _____

9. NUMBER OF SOURCES IN COMPLIANCE _____

10. NUMBER OF SOURCES NOT IN COMPLIANCE _____

11. NUMBER OF SOURCES SUBJECT TO REGULATIONS _____

12. NUMBER OF FACILITIES WITH APPROVED VARIANCE/ COMPLIANCE SCHEDULES _____

13. NUMBER OF CITATIONS ISSUED - VAPOR RECOVERY _____

14. NUMBER OF VIOLATION NOTICES ISSUED - VAPOR RECOVERY _____

THE STATISTICS ENTERED IN CATEGORIES E AND F SHOULD REFLECT TOTAL DISTRICT ACTIVITIES ON ALL FACILITIES DURING THIS QUARTER

CATEGORY E: FIELD SURVEILLANCE ACTIONS

15. TOTAL NUMBER OF OPACITY OBSERVATIONS DOCUMENTED _____

16. TOTAL NUMBER OF INSPECTIONS CONDUCTED _____

17. TOTAL NUMBER OF STACK TESTS CONDUCTED _____

18. TOTAL NUMBER OF STACK TESTS OBSERVED _____

CATEGORY F: ADMINISTRATIVE ACTIONS

19. TOTAL NUMBER OF ABATEMENT ORDERS ISSUED _____

20. TOTAL NUMBER OF CITATIONS ISSUED _____

21. TOTAL NUMBER OF VIOLATION NOTICES ISSUED _____

22. TOTAL NUMBER OF CASES REFERRED TO THE ATTORNEY GENERAL, DISTRICT ATTORNEY, COUNTY COUNSEL OR CITY ATTORNEY _____

23. TOTAL NUMBER OF CASES REFERRED TO A COURT OF APPROPRIATE JURISDICTION _____

24. TOTAL NUMBER OF CASES SUCCESSFULLY PROSECUTED _____

COMMENTS:

C. Inspection Methods

Several source surveillance methods can be used to determine compliance with air pollution regulations and gather data. The method or combination of methods used depends on the source. For example, a visible emissions evaluation would be sufficient to determine if a source subject only to emission opacity regulations is in compliance. To monitor compliance with vapor recovery regulations, the APCD would establish the efficiency of the vapor recovery system by determining that the system is ARB certified first, and then conduct periodic site inspections to assure that the system is still in good repair. Figure 23-2 demonstrates the recent frequency and type of surveillance methods used by the districts.

The inspection methods which are used include:

1. Visible Emissions Examinations (VEEs)

The VEE consists of visually comparing black or gray smoke to a scale of shades of gray known as the Ringleman Chart. The standard for other visible emissions is based on the amount of light obscured by the smoke, known as the equivalent opacity. The validity of using the Ringleman Chart has been established in the field of air pollution regulation and in the courts.

Stack and fugitive emissions are periodically observed by trained inspectors to detect violations of visible emissions regulations. Most APCDs have staff who are trained by the ARB in visible emissions monitoring and are recertified every six months; the rest have contracts with other districts to provide them with this capability.

In some districts, inspectors ride a circuit to identify possible problems using VEEs. Violations are also frequently observed by APCD staff and through the observations of interested citizens, which are verified by certified APCD staff.

2. Source Testing

Source testing is the sampling and measurement of emissions from a stationary source. Source test equipment is capable of determining the concentrations of various gaseous pollutants flowing through a stack by the use of one of two methods. The wet chemistry method consists of taking a "grab sample" of the gaseous stream. The material in the sample is absorbed in a chemical solution, which

Figure 23-2
Inspections Conducted by APCDs in
1st, 2nd, and 3rd Quarter 1977-78*

	Visible Evaluations Documented			Inspections Conducted			Stack Tests Conducted			Stack Tests Observed		
	1	2	3	1	2	3	1	2	3	1	2	3
Amador	0	2	0	2	6	12	0	0	0	0	0	0
Bay Area	141	546	472	8250	10,010	966	60	44	53	2	0	0
Butte	11	7	4	18	21	12	0	0	1	0	0	0
Calaveras	0	0	0	2	2	2	1	1	0	1	1	0
Colusa	0	0	0	0	0	0	0	0	0	0	0	0
Del Norte	11	11	10	9	15	14	0	0	0	0	0	0
El Dorado	3	1	7	8	5	9	1	0	0	0	0	0
Fresno	68	184	116	327	44	269	1	3	1	5	9	1
Glenn	2	3	0	17	3	2	0	0	0	0	0	1
Great Basin	22	5	7	7	13	5	0	0	0	0	0	0
Humboldt	40	22	70	49	41	43	2	2	1	0	4	2
Imperial	14	10	9	22	2	26	1	0	0	1	0	9
Kern	6	33	21	1056	1165	1134	10	1	2	4	3	7
Kings	6	4	1	37	20	58	0	0	0	1	0	0
Lake	0	0	6	0	0	6	1	0	0	1	0	0
Lassen	11	0	6	4	4	4	0	0	0	0	0	0
Madera	5	2	2	12	2	12	0	0	0	0	0	0
Mariposa	0	0	0	0	0	0	0	0	0	0	0	0
Mendocino	4	5	7	6	4	27	0	0	0	1	0	1
Merced	11	4	20	21	29	103	0	0	1	1	0	1
Modoc	2	1	3	1	1	5	0	0	0	0	0	0
Monterey Bay	1477	1453	1086	165	72	511	0	0	0	5	4	5
Nevada	0	0	0	5	6	7	0	0	0	0	0	0
Northern Sonoma	1	3	0	9	89	23	0	0	0	0	0	0
Placer	2	2	5	20	25	20	0	0	1	0	0	1
Plumas	24	2	0	9	1	2	1	0	0	1	0	0
Sacramento	84	112	0	189	181	215	0	0	0	1	0	2
San Diego	1869	1876	1857	728	889	883	28	16	41	0	0	6
San Joaquin	20	16	8	120	166	221	0	0	0	1	1	5
San Luis Obispo	7	6	8	35	72	20	1	0	0	4	1	1
Santa Barbara	162	105	58	72	562	259	2	4	0	0	0	0
Shasta	378	377	553	33	23	38	3	1	3	3	0	0
Sierra	1	1	0	2	2	0	1	1	0	1	1	0
Siskiyou	0	0	2	5	2	2	0	0	0	0	0	0

Figure 23-2 (cont'd)

	Visible Evaluations Documented			Inspections Conducted			Stack Tests Conducted			Stack Tests Observed		
	1	2	3	1	2	3	1	2	3	1	2	3
South Coast	11109	5770	4527	12209	2241	2425	42	49	49	24	10	3
Stanislaus	103	123	196	55	42	57	0	2	0	0	0	0
Sutter	0	0	0	38	1	0	0	0	0	0	0	0
Tehema	0	0	8	3	2	7	0	0	0	0	0	0
Trinity	8	10	8	10	10	16	0	0	0	0	0	0
Tulare	48	12	19	121	31	25	1	0	0	0	0	0
Tuolomne	10	8	24	11	32	37	0	0	0	0	0	0
Ventura	2	6	9	8	14	22	0	1	0	0	0	0
Yolo-Solano	28	0	34	57	32	20	1	8	2	2	0	0
Yuba	25	16	13	2	7	15	0	0	1	0	0	1

*1st Quarter: October, November, December 1977
2nd Quarter: January, February, March 1978
3rd Quarter: April, May, June 1978

Data Source: Quarterly Enforcement Statistics Reports, Compliance Data System.

is then analyzed in a laboratory. The ARB Enforcement and Stationary Source Control Divisions each have a mobile van equipped for wet chemistry testing, and the method is also used by most of the APCDs which have in-house source test capabilities.

The alternate method, continuous monitoring, uses a probe which is placed inside the stack for the duration of the test. A tube attached to the probe brings a gas sample to a mobile van, in which instruments continuously determine the concentration of several gases in the stream. Field test results are frequently correlated with laboratory analysis to confirm the instrument calibration. The ARB has two continuous monitoring vans, and the Bay Area Air Pollution Control District has one also.

The source test is needed in many cases to verify compliance with rules limiting the concentrations or amount of contaminants in the exhaust stream. It is also part of the permitting procedure of some APCDs and is used to gather data for research or to quantify emissions for emissions inventory.

Approximately one-fourth of the APCDs have in-house source testing capability, the rest either contract with other districts or with the ARB to provide them with this capability or require the source to have tests conducted by independent labs at the source's expense. The cost of source tests conducted by the ARB for enforcement or permitting purposes are charged to the source* (Section 41512).**

3. In-Stack Monitoring

In-stack monitors allow for the continued surveillance of stack emissions, and are required by federal law for specified sources (Clean Air Act Section 110 and 40 CFR 51.19, and Appendix P thereto). The ARB and APCDs have

*Exempted from source test fees are: small businesses (as defined in the California Administrative Code, Section 1896) and multiple tests of the same source in a 12-month period, except where the initial test showed noncompliance. Sources may petition the ARB for a partial or full reduction in fees in cases of demonstrable economic hardship.

**All sections cited are from the State Health and Safety Code unless otherwise stated.

the authority to require stationary sources to install and operate continuous monitoring devices to record the amount and concentration of emissions (Sections 41511, 42303, and 42700). All APCDs with sources subject to federal requirements have in-stack monitoring regulations, with the exception of requirements for the installation of in-stack opacity monitors. The ARB is currently evaluating continuous opacity monitors to determine their economic and technical feasibility.

Sources subject to in-stack monitoring are required to keep records for two years concerning equipment start-up, malfunctions and maintenance as well as records of the emission measurements (Section 42705). State law requires source operators to report emissions violations to the APCD within 96 hours; the district must relay this information to the ARB within five working days of receiving the report (Section 42706).

Rules adopted by the ARB and affected districts require continuous monitoring of the following sources and pollutants:

a. Fossil-fuel fired steam generators with a heat input of 250 million British Thermal Units (63 million kilogram calories) or more per hour with a use factor of at least 30 percent per year must be monitored for oxides of nitrogen and carbon dioxide or oxygen.

b. All sulfur recovery plants and sulfuric acid plants must be monitored for sulfur dioxide emissions.

c. All new nitric acid plants must be monitored for oxides of nitrogen.

d. Carbon monoxide boilers of regenerators of fluid catalytic cracking units, and carbon monoxide boilers of new and existing fluid cokers for which the feed rate it greater than 10,000 barrels of crude oil per day, must be monitored for sulfur dioxide emissions.

4. Site Inspections

Site inspections include a check for the existence and proper functioning of emission control equipment, and conformance with permit requirements. Site inspections are sometimes combined with a "desktop" engineering evaluation in determining compliance in lieu of an annual source test.

5. Engineering Evaluations

An engineering evaluation combines emission factors for the process being examined, the type and amount of materials being used, and the expected efficiency of the control equipment, to estimate actual emissions. Data from previous source tests are incorporated when applicable.

6. Complaint Investigation

Complaints from the community about air pollution problems often lead to investigations of specific sources and are, in effect, a form of source surveillance. All APCDs investigate such complaints. Some APCDs provide toll free numbers or recordings which are monitored during nonbusiness hours so that complaints can be more easily registered by the public.

The Enforcement Branch of the ARB also has local and statewide complaint lines which are monitored around the clock (322-SMOG and 800/952-5588, respectively). Complaints received by the ARB are referred to the appropriate APCD for further investigation and action.

D. The ARB Role In Stationary Source Surveillance

The ARB's role in stationary source surveillance consists of overseeing and providing technical support for APCD activities. The ARB is made aware of local enforcement problems through citizen complaints or other means; these problems are referred to the district involved and usually require only a follow-up by the ARB to make sure that the district has taken the appropriate action. If necessary, the ARB has the authority to hold a public hearing on the matter to enforce existing district rules (Section 41505).

To aid local surveillance, the ARB provides the source test capability for most of the source tests conducted in the state. The Stationary Source and Legal Affairs and Enforcement Divisions each have a source test van fully equipped for the continuous monitoring of SO_2, NOx, CO, CO_2, O_2, and total hydrocarbon (THC) emissions. Each also has a wet chemistry test van which can measure some, but not all of these pollutants. In addition, the Stationary Source Control Division has a test van with wet chemistry test capability for gaseous pollutants and particulate matter, and a hydrocarbon sampling van. The Research Division also has a test van, for data gathering purposes.

Members of the ARB staff witness source tests conducted by APCDs and independent firms contracted by a source to validate the results, when they are requested to do so. Figure 23-2 shows the number of source tests conducted by the ARB. In addition, the ARB also conducts three visible emissions evaluation training courses per year to certify inspectors, with monthly recertification sessions in Sacramento and periodic sessions throughout the rest of the state.

Figure 23-3

ARB Source Test Actions
1976 - 1978

	Enforcement	Stationary Source
Reporting period	February 1977 to July 1978	July 1976 to July 1978
Source tests conducted	48	82
Source tests witnessed	0	15
Approximate average length of tests conducted	72 hours	8 hours

III. Mobile Sources

A. Existing Programs

1. Assembly-Line Testing

At the end of each manufacturer's assembly line, all passenger cars, light-duty trucks, and medium-duty trucks must pass (1) an inspection to determine if the emission control systems are properly installed and operational, and (2) an exhaust emissions test, while the vehicle engine is idling, to measure concentrations of hydrocarbons and carbon monoxide ("idle emissions test"). In the idle emissions tests, all vehicles must not exceed the "control limit," an emissions level specified by the ARB for various types of vehicle configurations and statistically related to the emission standard. In addition, 2% of the vehicles are randomly selected for further emissions testing as a quality audit, using the EPA approved CVS-75 procedure. This procedure measures concentrations of hydrocarbons, carbon monoxide, and nitrogen oxides. All assembly line inspection and testing are performed by the manufacturer, using the manufacturer's own equipment.

The manufacturer submits the test data from the 2% quality audit sample to the ARB every quarter. The ARB evaluates the test data, and if they show that a vehicle type has emissions that exceed statistical criteria specified by reference in the Administrative Code, Title 13, Chapter 3, Section 2055, the manufacturer may be required to modify all such vehicles manufactured, as well as future ones. If the ARB finds that such corrective actions has not been taken, it can hold a public hearing either to revoke the right to sell the vehicle in California, or to fine the manufacturer up to $5050 per vehicle sold in California (Health and Safety Code, Section 43211 and 43212).

2. Compliance Testing

The ARB randomly selects new passenger cars, light-duty trucks, and medium-duty trucks at the manufacturer's distribution center in Southern California and tests them at the ARB Haagen-Smit Laboratory in El Monte, in the "Compliance Testing" program. The CVS-75 test procedure is used. Four to 25 vehicles from each engine family in each model year are selected, the number depending on the degree of uncertainty of compliance. Four or five vehicles are initially tested; if compliance is uncertain, enough additional vehicles (up to 25) are then tested to statistically establish the status of compliance.

Sanctions that may be imposed upon a manufacturer for noncompliance of an engine family are the same as those in assembly line testing and are found in Section 43211 and 43212 of the Health and Safety Code.

3. Dealership Inspections

ARB inspectors visit about one-third of the dealerships and preparation centers in the state every year, selected randomly. New and used passenger cars and light-duty and medium-duty trucks that have undergone predelivery inspection are inspected and tested. The procedures followed in dealership inspections are specified in the Administrative Code, Title 31, Sections 2151 and 2152. Vehicles whose engines and emission control components do not comply with the specifications of Sections 2151 and 2152 are required to be adjusted or modified until they do comply. Enforcement actions under Section 43211 and 43212 of the Health and Safety Code may be brought against a dealer if more than two or three noncomplying vehicles are found.

4. Change-of-Ownership Inspections

All used vehicles (except diesel engines, which are exempt) are inspected and tested for proper operation of their emission control systems upon transfer of ownership or initial registration in California. This program is called the Certificate of Compliance Program. Each vehicle receives an inspection of basic engine parameters and emission control components, and is adjusted to the manufacturer's specifications certified for maximum emission control. An idle emissions test is then performed. If the exhaust emissions are found to be in compliance with the emission levels specified in Title 15, Section 3327 of the Administrative Code, a Certificate of Compliance is issued. If they are not in compliance, further adjustment of the engine is made until compliance is attained or no further adjustment can be made. A Certification of Compliance is then issued. This certificate must be presented to the State Department of Motor Vehicles before transfer of ownership or initial registration can occur.

The mechanics and auto garages which participate in this program are licensed by the Bureau of Automotive Repair in the State Department of Consumer Affairs.

5. Mandatory Vehicle Inspection Program (MVIP) in the South Coast Airshed

In 1973, the California Legislature approved a phased program for the inspection and maintenance of light-duty vehicles in use in the South Coast Airshed (including the South Coast Air Basin, Ventura County, and portions of Santa Barbara County). The program aims to achieve the emission control capabilities for which a vehicle was designed, through a regular inspection and maintenance program. Emission standards are set to force the repair of gross emitting vehicles rather than requiring that adjustments be made to all vehicles as is the case with the Certificate of Compliance program.

The MVIP requires the measurement of hydrocarbon (HC) and carbon monoxide (CO) emissions. It also requires that a written indication of probable cause for the vehicle exceeding the standard be given to the owner, and limits the value of required repairs to a maximum of $50 (with provisions that the maximum cost be increased to $75 if required due to inflation). Inspections will be conducted at 17 stations regulated by the Bureau of Automotive Repairs (BAR), while a larger number of private operators will be licensed by the BAR to make repairs.

A trial inspection program with voluntary repairs, conducted in Riverside in 1977, was used to establish inspection standards and point out operational problems. The next phase will be started in January 1979, and requires the inspection of all light-duty passenger vehicles prior to a change of ownership. A mandatory annual inspection program is scheduled to start in 1981, conditioned on legislative review of the effectiveness of the initial stages.

The model program is designed to determine the cost effectiveness of mandatory annual inspection program in the South Coast Airshed, and supplants the Certificate of Compliance program for the areas effected. Application of the MVIP to other portions of the state is dependent on local SIP decisions and on the passage of enabling legislation.

6. New Motorcycle Compliance Testing

Procedures for compliance testing new motorcycles have been developed and will be implemented as the testing instrumentation arrives. These procedures are essentially the same as those for new passenger cars and light-duty trucks described in Section III(A)(2) of this chapter.

7. Aftermarket Parts Program

The evaluation of replacement emission control components is a necessary part of the ARB's efforts to reduce the rate of emission control system deterioration. To do so, the ARB examines three types of components; manufacturer's replacement parts, aftermarket parts, and rebuilt parts.

Replacement parts for original equipment manufacturer's parts have been assumed to conform to the appropriate standard. Aftermarket parts, which are frequently consolidated to replace original parts for several models, are being examined to determine the equivalency of the replacement part to the original equipment. Rebuilt parts are being similarly examined.

B. Programs Under Consideration

1. Mandatory annual vehicle inspection programs for areas which will not be able to demonstrate the attainment of oxidant and carbon monoxide standards by 1982; a requirement for EPA extension of the attainment dates of the standards to 1987.

2. Inclusion of medium and heavy-duty gasoline powered trucks, diesel powered vehicles and motorcycles into the MVIP.

3. Reactivation of the California Highway Patrol program of random roadside tests of vehicles, using the idle emissions test. This program was highly cost-effective and was to have been reactivated in 1978. However, cut-backs as a result of Proposition 13 have forced an indefinite postponement.

4. Regulated tune-ups of heavy-duty diesel vehicles.

5. Regulation of the engine-rebuild industry.

IV. Emissions Inventory

A. Introduction

The Emissions Inventory Subsystem (EIS), a computer program developed by the EPA, is being used to accumulate and store emissions data from major point sources in the state. In addition to the federally required point source information, the ARB's inventory also contains area and vehicular emissions data. Information in the EIS provides a description of the emissions of an air basin or county in the state or of the entire state, and may be used to indicate future air quality. Chapter 5, Section II, shows the source categories which are listed in the inventory and how the emissions for each are calculated.

B. Procedures for Obtaining Data

1. Major Point Sources

The EIS contains emission information about sources which emit more than 25 tons per year of any pollutant, giving the California inventory a broader data base than the federally required listing of sources emitting over 100 tons per year. In addition, the state system lists sources which emit over 5 tons per year of lead.

Local APCDs provide the ARB with source data for each facility in accordance with an established computer data format. Several larger districts use the EIS on the local level, and provide their data to the ARB on magnetic computer tape. Although the data is reported on a yearly basis, it is updated semi-annually for greater accuracy.

Primary responsibility for maintaining data for stationary sources lies with the districts. Data submitted by the districts are reviewed by the Emissions Inventory Section of the ARB for reasonableness. The ARB Subvention Section reviews district permit files to determine if the local evaluations are adequate to establish source emissions.

2. Area Sources

The area source inventory data storage system for the state is designed to identify all emissions not included in the point source emissions inventory (EIS) and the motor vehicle emissions inventory. The system is being implemented statewide and APCDs are now submitting emission data to ARB. Local agencies furnish the basic data for approximately one half the categories of emissions, covering those categories where local expertise is required to identify and document the emissions information. The ARB gathers data and determines the emissions for categories of emissions that are relatable to:

a. general information such as population;

b. information now accumulated at the state level; and

c. information as readily available to the ARB as to the local district.

3. Vehicular

The emission inventory for motor vehicles is based on the average vehicle miles travelled (VMT) in a county by the vehicles in that vehicle category. The VMT is derived from the average annual mileage data and vehicle registration statistics provided by the Department of Motor Vehicles.

Actual emissions are then derived by applying the EPA's mobile source emission factors to the vehicle population in each county. The ARB staff continuously refines the motor vehicle assessments, changing the factors and basinwide average vehicle speeds to reflect new data from ARB conducted surveillance programs which involve the testing of hundreds of in-use vehicles each year at the Board's Vehicle Emissions Testing Facility in El Monte, California.

V. Determination of Emission Reductions from Transportation Control Measures

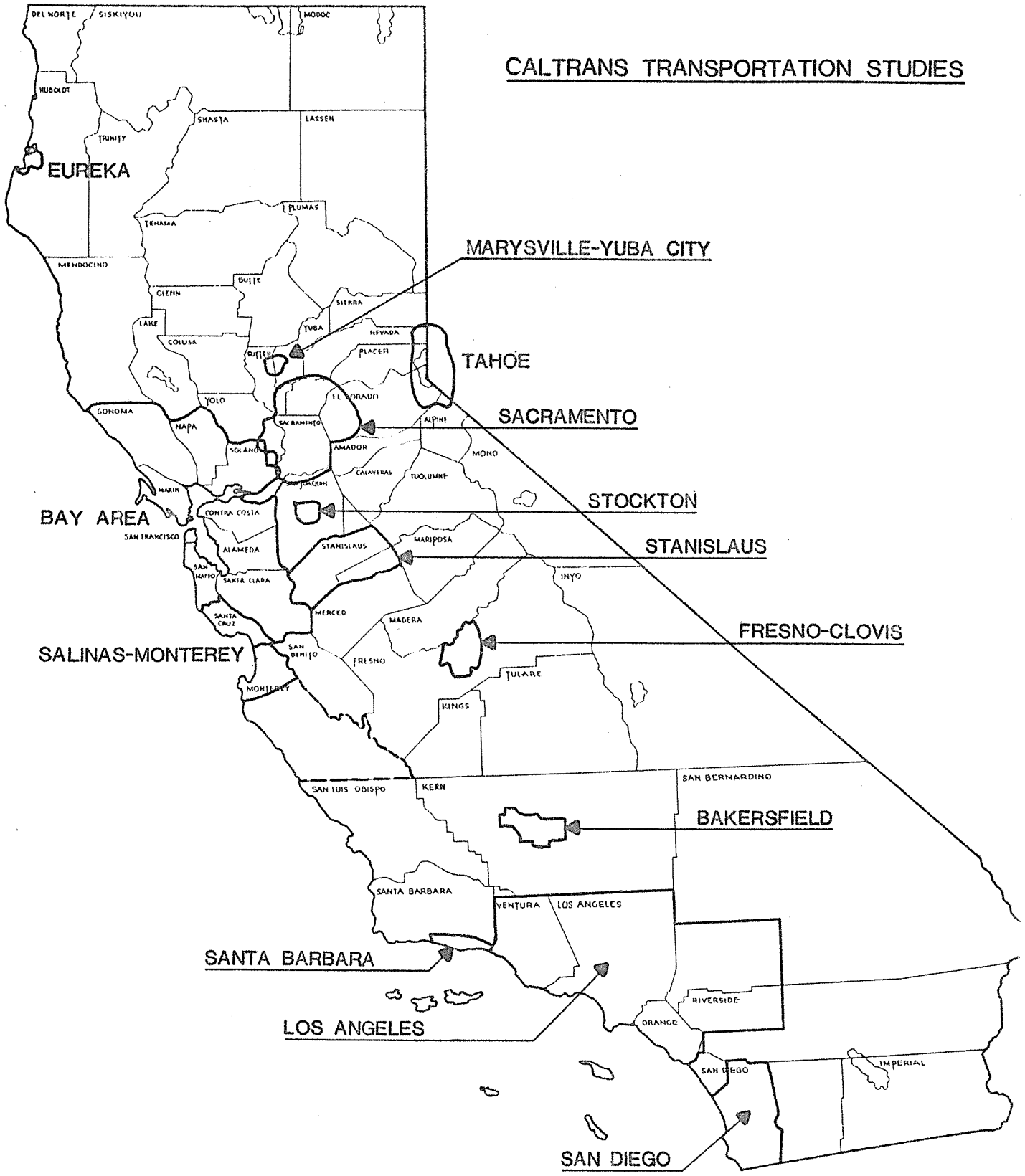
Transportation control measures (TCMs) are designed to control emissions from automobiles and light duty vehicles by reducing vehicle use. Included are measures which promote ridesharing, mass transit or other modes of travel, or which restrict vehicle use through such measures as downtown parking restrictions.

The State Department of Transportation (Caltrans) Division of Transportation Planning (DOTP) transportation system analysis models are used to help develop SIPs for some areas of the state. These models can be used to project changes in traffic patterns and automobile use and the resulting emissions, due to transportation control measures or changes in land use.

The models are of use to local planners because they offer information in one square kilometer (or similar sized) areas, and give hourly rather than daily emissions. Based on Caltrans surveys, the model can generalize when and where people in an area travel, for how far, and what mode of travel they use. Figure 23-2 shows the areas of the state for which a Caltrans model is available; all of the state's major urban centers are included.

The individual basin chapters will give further documentation on the specific models used, including the assumptions upon which they are based.

FIGURE 23 - 4


CALTRANS TRANSPORTATION STUDIES
EUREKA
MARYSVILLE-YUBA CITY
TAHOE
SACRAMENTO
STOCKTON
BAY AREA
STANISLAUS
FRESNO-CLOVIS
SALINAS-MONTEREY
BAKERSFIELD
SANTA BARBARA
LOS ANGELES
SAN DIEGO
DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
PLUMAS
TEHAMA
MENDOCINO
GLENN
BUTTE
SIERRA
LAKE
COLUSA
YUBA
NEVADA
PLACER
YOLO
EL DORADO
SONOMA
NAPA
SACRAMENTO
ALPINE
SOLANO
AMADOR
MONO
CALAVERAS
TUOLUMNE
MARIN
CONTRA COSTA
SAN FRANCISCO
ALAMEDA
STANISLAUS
MARIPOSA
SAN MATEO
SANTA CLARA
INYO
MERCED
MADERA
SANTA CRUZ
SAN BENITO
FRESNO
TULARE
MONTEREY
KINGS
SAN LUIS OBISPO
KERN
SAN BERNARDINO
SANTA BARBARA
VENTURA
LOS ANGELES
RIVERSIDE
ORANGE
SAN DIEGO
IMPERIAL